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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,631	01/11/2000	HISASHI YAMADA	Q57317	5337

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SUGHRUE MION ZINN MACPEAK & SEAS
2100 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 200373202

EXAMINER

PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/462,631

Applicant(s)

Yamada et al

Examiner

M.L. Palselt

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 6/20/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-8 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 3-4 and 7 is/are allowed.
- ☒ Claim(s) 1-2 + 5, 6 + 8 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/20/03 has been entered.

2. To clarify the record, on page 2, 2nd line from bottom of paper # 14, there was suppose to be an "or" in "gas liquid" between "gas" and "liquid", which proof reading missed. Apologies for the confusion this seems to have induced, but as applicants' quota from Welsh shows, in light of the reference it was clearly "or".

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Norman C Welsh, discussed in section 3 of paper # 14.

Applicant's amendment has removed the option of working fluid being air, and having C-containing components thereof in voids in the electrodes. Also, applicant's interpretation of Welsh, p. 2, lines 37-44 is probably accurate, although the phrasing is somewhat ambiguous.

However, Welsh's electrode is a compression molded powder, that may use metal, and is used with or in a liquid or paste medium that may use carbonaceous carrier mediums of grease or mineral oil, which will inherently be absorbed by at least surface areas of the compression molded electrode, thus effectively the structure of the electrode is consistent with the product claimed, which has no limits on the distribution of the metal powder and working liquid in the electrode, just that they both must be present. Also note that for the product, it does not matter if the "working liquid" in the paste or the like is actually used for the spark discharge processing, as the types of carbonaceous liquid, i.e., oils, taught are conventional for such use, i.e., the product does not ever have to be used as intended by applicant, it only need be capable of it.

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5. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welsh, alone or in view of Magara et al or Saito et al (479), as discussed in section 4 of paper # 14 for liquids.

The rejection has been maintained for these claim, because whether or not the working liquid was present at the time of compacting is not relevant to either the product or its use, but as noted above use in the claimed working fluid/liquid would provide absorption in porous green structures, but would not have been expected to be too high due to the lower molecular weight of the carbonaceous materials verses metal powders, and would vary with porosity of the electrode, but with expectations of being within the range claimed.

6. Claims 1-2 & 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welsh, optionally in view of Magara et al or Saito et al (479) as applied to claims 1-2 & 5-6 above, and further in view of Vignaud as in section 6 of paper # 14.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Welsh, in view of Vignaud, optionally in view of Magara et al or Saito (479) as applied to claims 1-2 + 5-6 above, and further in view of Koike et al in section 8 of paper # 14.

8. Since independent claims 3 and 7 are limited to working liquids having carbon components as well as metal particles, and require electrode formation steps using that liquid in the compression molding to form the discharge electrode, they appear to distinguish over the cited prior art.

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Other art of interest including Saito et al (JP 7-70761) who compression molds metal powders of interest, but only uses working liquid after molding, hence is equivalent to the above rejection over claims 1-2 & 5-6. Saito et al (JP 11-000827A) is noted to say in its abstract that it is molding metal, but it's using the metal compound TiH_2 , so this is a misnomer, and not considered equivalent to the above rejections despite using oil as working fluid, as not really employing the type of powder (metal) as claimed. Goto et al (WO/29159) is of interest as using working fluid for compacting, but the powders are ceramics, however water unless purified of desorbed CO_2 , CO and various organic contaminants contains carbons. While the examiner found no compacting of metal powder where water, as in a slurry or moistened powders were used, applicants might wish to limit their liquid having a carbon component to require something more than contaminate levels of C, to provide meaning probably intended. Ishikawa et al and JP-05117720 are noted to use water in processes just before or after compacting. The abstract to JP 71024501 B compression molds the metal cadmium with paraffin to form an electrode, but paraffin while carbonaceous, is a wax that is solid (unless your British who may call kerosene paraffin) so this reference also appears differentiated over.

The patent to Blindheim is of interest for compression molding green electrodes with pitch as a binder, but carbon electrodes are being formed, not metal containing ones. Yamamoto et al is of interest for recycling of electrode material, but uses no metals in their compression molded/recycled electrode.

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9. Any inquiry concerning this communication should be directed to M L.

Padgett at telephone number 703-308-2336 on M-F from about 8:30 am – 4:30 pm; and

FAX # (703) 872-9310 (regular); 872-9311 (after final); or 305-6078 (informal).

M. L. Padgett/mn 6/30/03
July 7, 2003

A handwritten signature in cursive script, reading "Marianne Padgett". The signature is written in black ink and is positioned above a typed nameplate.

**MARIANNE PADGETT
PRIMARY EXAMINER**